

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

|                                       |   |                     |
|---------------------------------------|---|---------------------|
| In the Matter of                      | ) |                     |
|                                       | ) |                     |
| Improving Communications Services for | ) | CG Docket No. 11-41 |
| Native Nations                        | ) |                     |
|                                       | ) |                     |
|                                       | ) |                     |

**COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION**

June 20, 2011

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## **SUMMARY**

Satellite technology is uniquely well suited to addressing the challenges of improving communications services for Native Nations. As the Commission has recognized, satellite networks have broad coverage patterns and distance-insensitive cost structures. Because of these characteristics, satellite networks can provide service to even the most remote areas on an economical basis, allowing connections to be established without the need for extensive infrastructure build-out.

These attributes are driving factors supporting the significant role that satellite systems play today in serving Tribal lands. Satellites offer a full range of services nationwide, from basic voice connectivity to high-speed, quality broadband services that are comparable to many terrestrial technologies across key relevant metrics of service. Satellites are essential to the delivery of video and audio services as well, ensuring that news, entertainment, and cultural programming are available throughout the country. Next generation satellite networks will build on this foundation, improving the quality and reliability of satellite services and introducing new capabilities.

To ensure that satellite services can fulfill their potential in meeting the needs of Native Nations, the Commission must apply any support mechanisms on a truly technology-neutral basis. This requires the Commission to eliminate any artificial barriers that have the effect of precluding customers of satellite services from receiving the benefits of support programs. SIA welcomes the opportunity to work with the Commission in order to assess and respond to the communications requirements of Native Nations.

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**COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION**

The Satellite Industry Association (“SIA”) hereby responds to the Commission’s Notice of Inquiry in the above-captioned proceeding, which seeks comment regarding the use of satellite networks to provide communications on Tribal lands.<sup>1</sup> The Notice invites input on various economic, market entry and adoption incentives the Commission could implement to enhance access to communications infrastructure in Native Nations. As discussed below, SIA believes that satellite technology is especially well suited to play a significant role in improving communications available to Tribal lands.

SIA is a U.S.-based trade association providing worldwide representation of the leading satellite operators, service providers, manufacturers, launch services providers, and ground equipment suppliers.<sup>2</sup> Since its creation fifteen years ago, SIA has

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<sup>1</sup> *Improving Communications Services for Native Nations*, Notice of Inquiry, CG Docket No. 11-41 (rel. Mar. 4, 2011) (“Notice”).

<sup>2</sup> SIA Executive Members include: Artel, Inc.; The Boeing Company; CapRock Communications, Inc.; The DIRECTV Group; Hughes Network Systems, LLC; DBSD North America, Inc.; Echostar Satellite Services, LLC; Integral Systems, Inc.; Intelsat S.A.; Iridium Communications Inc.; LightSquared; Lockheed Martin Corporation; Loral Space & Communications, Inc.; Northrop Grumman Corporation; Rockwell Collins Government Systems; SES WORLD SKIES; and TerreStar Networks, Inc. SIA Associate Members include: Arqiva Satellite and Media; ATK Inc.; Cisco; Cobham SATCOM Land Systems; Comtech EF Data Corp.; DRS Technologies, Inc.; Eutelsat, Inc.; GE

become the unified voice of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business. As the primary representative of the U.S.-based satellite industry, SIA has a direct stake in the issues raised in the Notice relating to using satellites to meet the communications services needs of Native Nations.

As the Commission recognizes in the Notice, satellite network technology is well suited to overcome some of the major obstacles to expanding communications services to Tribal lands. Because satellite networks provide distance-insensitive service over very broad coverage areas, they are ideal for providing communications services in rural and remote areas where terrestrial networks are not fully deployed. Satellites are actively serving Tribal lands today, and future satellite networks will expand this capability. The Commission can facilitate satellite service providers' ability to respond to the needs of Native Nations by ensuring that any support programs are technology neutral in their effect.

**I. THE SATELLITE INDUSTRY CAN HELP THE COMMISSION ACHIEVE ITS GOALS FOR NATIVE NATIONS RAPIDLY AND EFFICIENTLY**

**A. The Notice Recognizes that Native Nations Face Unique Challenges in Acquiring Access to Communications Services**

As the Notice acknowledges, Native Nations confront many challenges in addressing communications needs on Tribal lands. The commonly irregular shape and ruggedness of Tribal lands have proven to be significant obstacles to terrestrial

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Satellite; Globecom Systems, Inc.; Glowlink Communications Technology, Inc.; iDirect Government Technologies; Inmarsat, Inc.; Marshall Communications Corporation; Orbital Sciences Corporation; Panasonic Avionics Corporation; Segovia, Inc.; Spacecom, Ltd.; Spacenet Inc.; Stratos Global Corporation; TeleCommunication Systems, Inc.; Telesat Canada; Trace Systems, Inc.; and ViaSat, Inc. Additional information about SIA can be found at <http://www.sia.org>.

communications infrastructure deployment.<sup>3</sup> Most Tribal lands are predominantly rural and thinly populated, making the cost of deployment disproportionately high per person and per household.<sup>4</sup> Difficulty in obtaining necessary rights-of-way also continues to hamper infrastructure deployment.<sup>5</sup> Availability of communications services on Tribal lands still lags far behind national averages, and even where service is available, adoption rates also lag behind those of other communities.<sup>6</sup> The Commission has noted that, while there is no solid data on broadband deployment on Tribal lands, availability is estimated at less than 10 percent.<sup>7</sup>

These circumstances – including rugged terrain, difficulty with rights of way, sparse population and low adoption rates – do not provide strong incentives for companies to expand terrestrial communications infrastructure to Tribal lands. As the FCC observed in the National Broadband Plan, broadband deployment on Tribal lands is hindered by the combination of high build-out costs and limited financial resources that deter investment by commercial providers, and current funding programs are insufficient to address all of the challenges of serving Tribal lands.<sup>8</sup>

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<sup>3</sup> *Id.* at ¶ 2; Statement of Chairman Julius Genachowski.

<sup>4</sup> *Id.* at ¶¶ 2, 69; see also Improving Communications Services for Native Nations by Promoting Greater Utilization of Spectrum over Tribal Lands, Second Report and Order, First Order on Reconsideration, and Second Further Notice of Proposed Rulemaking, MB Docket No. 09-52, RM-11528, FCC 11-28 (rel. Mar. 3, 2011) (“Native Nations Spectrum Notice”) at ¶ 15 (noting that “often there is no private sector business case” for deployment of infrastructure on Tribal lands).

<sup>5</sup> Notice at ¶ 2.

<sup>6</sup> *Id.* at ¶ 1.

<sup>7</sup> *Id.*, citing *Connecting America: The National Broadband Plan*, prepared by the staff of the Federal Communications Commission (rel. March 17, 2010) (“National Broadband Plan”) at 152, Box 8-4 and citations therein.

<sup>8</sup> National Broadband Plan at 152.

Impaired access to communications services leads to a host of adverse consequences: “[t]he lack of robust communications services presents serious impediments to Native Nations’ efforts to preserve their cultures and build their internal structures for self-governance, economic opportunity, health, education, public safety and welfare – in short, to secure a brighter future for their people.”<sup>9</sup> In particular, the Notice highlights the need to ensure that Tribal lands have access to reliable public safety and emergency communications<sup>10</sup> and that the needs of disabled individuals living on Tribal lands are met.

**B. Satellite Technology Is Well Suited to Addressing the Communications Services Requirements of Native Nations**

The Notice requests comment on how existing satellite voice and data services are currently used to provide service on Tribal lands, as well as any recommendations regarding overcoming barriers to continued utilization or expansion.<sup>11</sup> The Commission also inquires about specific ways to help Native Nations address public safety issues on Tribal lands, including the broad lack of 911 and E-911 services, and serving the needs of persons with disabilities.<sup>12</sup>

Satellite networks today cover virtually every part of the United States. Satellites provide instant, ubiquitous, and reliable service. Rugged and uneven terrain that would make wireline facilities deployment uneconomic and wireless service impractical is easily served by satellite. Most importantly, satellite uniquely excels at providing service in locations where no other technology can, while still remaining cost-competitive. The Commission’s National Broadband Plan found that “[s]atellite has the

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<sup>9</sup> Notice at ¶ 1.

<sup>10</sup> *Id.* at ¶¶ 33-36.

<sup>11</sup> *See* Notice, Section III(I).

<sup>12</sup> *Id.*, Sections III(G) and III(J).

advantage of being both ubiquitous and having a geographically independent cost structure, making it particularly well suited to serve high-cost, low-density areas.”<sup>13</sup>

Satellite communications costs do not vary based on the location served.

Connecting a new site, no matter how remote, to a satellite network requires only the installation of a single earth station. As a result, satellite systems can be extended to rural and sparsely populated lands economically, without the need to string miles of wires or deploy multiple wireless transmitters.<sup>14</sup> Satellite operators can spread the cost of deployment across many communities, which helps ensure that the most hard to reach areas can be served at a lower cost than would be the case for a terrestrial deployment. As the Commission has stated, satellites can be a “cost-effective means to serve communities with low penetration rates, especially those in remote areas,” and satellite “may offer cost advantages over wireline access in rural and remote areas, where sparsely populated areas cannot provide the economies of scale to justify the deployment costs of wireline networks.”<sup>15</sup>

This cost advantage makes satellite technology suitable not only for providing stand-alone services, but also for providing links to terrestrial networks as part of a hybrid solution. Satellites can, for example, provide “middle-mile” or backhaul Internet connectivity to local ISPs and community institutions in remote locations, with data and

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<sup>13</sup> National Broadband Plan at 137.

<sup>14</sup> Importantly, satellite’s ability to provide communications services on Tribal lands without the need for towers and related infrastructure eliminates concerns regarding “the potential effect of tower sitings on [Native Nations’] traditional cultural properties or ‘sacred sites.’” See Notice at ¶ 46.

<sup>15</sup> *Extending Wireless Telecommunications Services To Tribal Lands*, Report and Order and Further Notice of Proposed Rulemaking, 15 FCC Rcd 11794, 11799 (2000) at ¶ 13.



voice capabilities comparable to terrestrial networks.<sup>16</sup> The satellite industry has the requisite capacity to provide at least 4/1 Mbps broadband service to every unserved household in the U.S at an overall cost well below the estimated \$24 billion required funding for the Connect America Fund.<sup>17</sup> And this capacity is set to increase significantly in the near future as new satellites are launched, as detailed below.

Satellites also offer unique advantages in ensuring that first responders and emergency personnel have access to robust and reliable communications, no matter how remote their operations. The current wildfires raging in Arizona and New Mexico provide a vivid illustration of the important role satellites can play in ensuring firefighters and other public safety personnel have access to communications at all times, even in the most inhospitable and inaccessible areas. Similarly, satellites can provide critical support to medical personnel in Tribal lands, whether by ensuring a remote clinic has reliable access to medical data, or by enabling an ambulance to communicate information about a critical patient in “real time,” regardless of where that ambulance might be located.

SIA believes satellite-delivered telecommunications services can provide important opportunities for Native Peoples to develop avenues for self-governance, economic expansion, healthcare, education, public safety, welfare, and community development. Satellites can also facilitate access to broadband as a tool to preserve Native American cultural heritage beyond the confines of Tribal lands, enabling Native Americans to maintain connectivity to the community at large.

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<sup>16</sup> See, e.g., Comments of the Satellite Industry Association, WC Docket No. 05-337 (filed July 2, 2007).

<sup>17</sup> National Broadband Plan § 8.1

In short, for remote or sparsely populated Tribal lands, satellite links are likely to be the most economically viable and rapidly deployable method of aggregating demand for sophisticated digital communications services. Satellite-delivered services can be a key ingredient in providing the telecommunications links that are essential to Native Nations' full participation in the 21<sup>st</sup> century economy and society.

## **II. SATELLITES ALREADY PROVIDE SUBSTANTIAL SERVICES TO TRIBAL LANDS, AND FUTURE SATELLITE NETWORKS WILL OFFER EVEN GREATER CAPABILITIES**

### **A. Satellite Networks Play an Important Role In Serving Tribal Communities Today**

Current satellite networks offer a broad variety of services that are relied on to provide vital connectivity to Tribal lands. Satellites provide basic voice capability where terrestrial infrastructure is lacking, supply audio and video programming nationwide, and extend broadband availability to remote and underserved areas.

Satellite providers such as WildBlue and HughesNet currently offer rural broadband Internet access to residential and commercial consumers in virtually every area of the contiguous 48 states, including areas classified as Tribal lands. These providers boast speeds that rival those of cable and DSL, competing vigorously with terrestrial broadband providers, while reliably providing service where terrestrial broadband would otherwise be impossible.<sup>18</sup>

Mobile Satellite Service (MSS) carriers serve an important role as providers of mobile communications services in areas where terrestrial networks may not extend or provide reliable coverage. Even where there is terrestrial wireless coverage, some possible subscribers may remain unreachable with terrestrial wireless applications due to

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<sup>18</sup> See [www.wildblue.com](http://www.wildblue.com) and [www.hughesnet.com](http://www.hughesnet.com).

interference, terrain, or distance. MSS providers have the capacity to reach all possible users in Native Nations with not only narrowband voice, but also broadband data capabilities.

Last year, LightSquared and the Indian Health Service (“IHS”), an agency within the Department of Health and Human Services, arranged for LightSquared to donate satellite phones with free service through 2020 for use in American Indian and Alaska Native communities.<sup>19</sup> Moreover, the Bureau of Indian Affairs uses LightSquared’s satellite network for communications in law enforcement vehicles and school buses operating on Tribal lands in New Mexico and Arizona. Inmarsat’s current BGAN offerings enable mobile users to have access to broadband applications ranging from data transfers and internet access to streaming video, ensuring that public safety, telemedicine and other essential services have access to broadband capability in remote locations. Last year Inmarsat also launched a global handheld offering that supports satellite telephony, including circuit switched voice, voicemail, text and e mail messaging. And Iridium currently provides essential mobile voice and data communications connectivity throughout the country, including in all Tribal lands, that allows users to remain connected to a range of vital services, including public safety and emergency services, no matter how remote the location.

Fixed Satellite Service (FSS) networks link Tribal lands to the Internet backbone by offering “middle mile” connectivity.<sup>20</sup> FSS operators can, for example,

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<sup>19</sup> See [www.lightsquared.com/press-room/press-releases/lightsquared-and-the-indian-health-service-partner-for-remote-communications-for-the-indian-health-system/](http://www.lightsquared.com/press-room/press-releases/lightsquared-and-the-indian-health-service-partner-for-remote-communications-for-the-indian-health-system/)

<sup>20</sup> See Comments of the Satellite Industry Association, WC Docket No. 05-337 (filed July 2, 2007) at 2; Comments of the Satellite Industry Association, GN Docket Nos. 09-47, 09-51 & 09-137 (filed Nov. 4, 2009) (“SIA Middle Mile Comments”) at 2-5.

provide Internet “middle mile” backhaul connectivity to earth stations operated by ISPs and provide bandwidth based on ISP requirements. The ISP then provides the “last mile” to end users through a hub station. Dozens of FSS satellites operated by SIA member companies have full 50-state coverage and many more offer full or partial coverage of the contiguous United States.<sup>21</sup> Deploying a single earth station antenna at a broadband user network’s aggregation point is all that is required to initiate satellite service, allowing transport of traffic to an Internet gateway anywhere within the satellite’s footprint, regardless of the intervening distance or terrain.<sup>22</sup>

In addition, as the Notice recognizes, satellites are critical to the distribution of video and audio services nationwide, including on Tribal lands.<sup>23</sup> For example, nearly 30 million households receive their video programming directly from Direct Broadcast Satellite (DBS) networks.<sup>24</sup> Every day, C-band and Ku-band FSS satellites are used to deliver hundreds of channels of video programming to thousands of cable systems throughout the country, which serve another 60 million households.<sup>25</sup> Satellites are also used to deliver network or syndicated programming to thousands of television and radio stations nationwide.

Satellite Digital Audio Radio Service (SDARS) networks are important sources of audio programming, news and national emergency alerts for Native Nations. In fact, in remote areas, satellite radio may provide the only source of broadcast audio

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<sup>21</sup> See SIA Middle Mile Comments at 2.

<sup>22</sup> *Id.*

<sup>23</sup> Notice at ¶ 64.

<sup>25</sup> See *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, MB Docket No. 06-189, Thirteenth Annual Report, 24 FCC Rcd 542, 580, FCC 07-206, ¶ 75 (2009) (“Video Competition Thirteenth Annual Report”).

<sup>26</sup> See *id.* at 554, ¶ 30.

programming. As a result, residents in rural parts of the country are often more reliant on satellite radio for entertainment, news, sports, and weather programming than those in more urban environments. SDARS connectivity enhances the ability of Native Americans to preserve their culture, regardless of where they are located.

**B. Next Generation Networks Will Add to the Satellite Industry's Ability to Serve Tribal Lands**

To meet expected demand in coming years, both satellite and terrestrial broadband infrastructure will need to be expanded and extended into underserved and unserved areas. The satellite industry is well on its way to expanding its capacity, with many satellite industry participants announcing and deploying next-generation solutions.

For example, HughesNet and ViaSat have both recently announced launches of advanced Ka-band satellites. Projected to have ten times the capacity of current satellites at over 100 Gbps<sup>26</sup>, ViaSat's ViaSat-1 will provide more than the current capacity of the North American fleet of two-way Ka, C and Ku-band satellite throughput combined.<sup>27</sup> ViaSat projects services will be available at speeds of up to 12/3 Mbps throughout ViaSat-1's footprint.<sup>28</sup>

Inmarsat has responded to the growing need for additional bandwidth in its market by announcing three new I-5 Ka-band satellites to be launched starting in 2013.<sup>29</sup> These satellites will provide high capacity broadband offerings at data speeds up to

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<sup>26</sup> <http://www.viasat.com/news/18-million-broadband-gateway-contract-new-eutelsat-ka-band-ka-sat-satellite>

<sup>27</sup> <http://www.viasat.com/news/viasat1-transform-north-american-satellite-broadband-market>

<sup>28</sup> *Comments of VIASAT, Inc., In Re Lifeline and Link Up Reform and Modernization (WC Docket No. 11-42), Federal-State Joint Board on Universal Service (CC Docket No. 96-45), Lifeline and Link Up (WC Docket No. 03-109)*, April 12, 2011.

<sup>29</sup> [www.inmarsat.com/Services/Government/News/00036138.aspx?language=EN&textonly=False](http://www.inmarsat.com/Services/Government/News/00036138.aspx?language=EN&textonly=False)

50Mbps download/5Mbps upload to small, versatile mobile user terminals.<sup>30</sup>

LightSquared has already launched a next generation MSS satellite that will dramatically enhance mobile satellite service capabilities.<sup>31</sup> And by the first half of 2013 O3b Networks plans to launch a constellation of eight closely orbiting, non-geostationary fixed service Ka-band satellites to provide low latency Internet services to billions of users in remote areas of the world.<sup>32</sup> Additionally, Iridium's next generation constellation, Iridium NEXT, anticipated to begin launching in early 2015, will continue to enhance the company's services. Iridium NEXT will give Iridium the capability to meet rapidly expanding demand for mobile voice and data communications in all locations, including in all Tribal lands.

### **III. SUPPORT MECHANISMS DESIGNED TO ENHANCE COMMUNICATIONS ACCESS FOR TRIBAL LANDS MUST BE TECHNOLOGY NEUTRAL IN THEIR APPLICATION**

As discussed above, satellite networks are uniquely well suited to overcome many of the major obstacles to the availability and adoption of communications services in Native American communities. However, significant barriers still remain given the challenges faced by residents of Tribal lands. The Commission recognizes this and indicates that it is considering various support mechanisms to assist with the costs of communications services.<sup>33</sup> It is critical that any such mechanisms be truly technology neutral in their application to ensure that satellite networks are not hampered in their ability to meet the needs of tribal communities. If support mechanisms contain eligibility

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<sup>30</sup> *Id.*

<sup>31</sup> [www.lightsquared.com/press-room/press-releases/lightsquared-announces-the-successful-launch-of-next-generation-satellite/](http://www.lightsquared.com/press-room/press-releases/lightsquared-announces-the-successful-launch-of-next-generation-satellite/)

<sup>32</sup> See "O3b to launch in 2013," TeleGeography, Nov. 29, 2010, available at: <http://www.telegeography.com/products/commsupdate/articles/2010/11/29/o3b-to-launch-in-2013/>.

<sup>33</sup> See Notice, Sections III(B) and III(C).

requirements that effectively block their use for satellite services, a key tool for meeting the objectives of the Notice will be lost.

In particular, the Commission should ensure that its low-income programs are appropriately tailored to promote adoption on Tribal lands, including providing access to Lifeline and Linkup funds for purposes of buying low-cost satellite equipment and supporting satellite service.<sup>34</sup> Enabling access to these funds for the purpose of facilitating satellite-delivered communications will help ensure that low-income consumers and especially those in Tribal lands have the ability to obtain affordable communications, a paramount goal of the universal service programs.

The Commission could also promote service to Tribal lands by adopting policies that facilitate the availability of satellite-delivered mobile services to these areas. MSS has the ability to provide reliable service to support public safety, telemedicine and other applications more cost-effectively than terrestrial networks. The FCC should ensure that its programs afford satellite providers the practical opportunity to compete to provide these public service offerings.

Finally, SIA supports the establishment of the Native Nations Broadband Plan, provided that satellite services are deemed fully eligible for any funding that may be made available through the Plan.<sup>35</sup> Funding decisions made on a fully technology neutral basis will allow residents of Tribal lands to benefit more completely from the many technological and economic advantages that satellite-delivered broadband offers.

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<sup>34</sup> This approach is consistent with Recommendation 9.1 of the National Broadband Plan, which suggests that the FCC should expand the Lifeline and Linkup programs to make broadband more affordable for low-income households. National Broadband Plan § 9.1.


<sup>35</sup> See Notice at ¶ 10.

#### IV. CONCLUSION

For the foregoing reasons, SIA believes satellite-delivered communications represent an economical and efficient means of addressing the challenges set forth in the Notice. For remote and sparsely populated Tribal lands, satellite links are likely to be the most cost-effective method of providing state-of-the-art broadband and narrowband solutions. The satellite industry looks forward to working with the Commission and the Native American community to ensure that Tribal lands receive affordable and reliable communications over the years to come.

Respectfully Submitted,

The Satellite Industry Association

By:   
Patricia Cooper  
President

Dated: June 20, 2011